

REMARKS

Applicant notes with appreciation the allowance of claim 23 and the indication of patentable subject matter in claims 3, 7, 12 and 23. Former claim 12, which was previously objected to, is now re-presented as claim 9 and is rewritten in independent form including the base claim and any intervening claims.

Claims 1, 2, 4-6, 8-11, 13-22 stand rejected under 35 U.S.C. 102(b) over Casper et al. (US 5,963,608).

Due to the amendment of claim 9 to include the limitations of former claim 12, the rejection with respect to claim 9 and the rejection of dependent claims 10, 11, 13-15 are respectfully traversed. However, please note that claims 11, 12, and 13 are also now amended to show features not disclosed by Casper.

The rejection over Casper with respect to remaining claims 1, 2, 4-6, 8, and 16-22 is now respectfully traversed in view of the claim amendments and the discussion hereinafter.

To summarize Casper relevant to the following discussion of claims 1, 2, and 16, Casper's bit rate estimator 45 (which is the same as the data rate estimator 11 of Casper et al.) provides a "relatively close" estimate of the embedded clock signal (Casper Col. 6, lines 60-63). Casper utilizes sweep controller 51 to incrementally increase the value of VCO rate estimator 90 until bit rate estimator 45 and VCO rate estimator 90 are equal whereupon sweep controller 51 is disabled (Casper Col. 7, lines 22-27). Then Casper's phase acquisition (phase-locking) mode begins. For this purpose, Casper's loop filter sweep control 70 is now enabled to sweep VCO 55 over a range of frequencies encompassing the frequency range of uncertainty of the bit rate estimator 45 (Casper Col. 7, lines 37-40).

With respect to amended claim 1, Casper does not disclose a plurality of

See Range of freq

predetermined frequency ranges for phase locking as is now specifically required by claim 1. Prior to Casper's phase acquisition (locking) mode, Casper's frequency range is unknown, rather than predetermined as per claim 1. Once phase acquisition begins, Casper utilizes only a single frequency range which encompasses the frequency uncertainty of the bit rate estimator. (Casper Col 7, lines 37-40). Therefore, more specifically, Casper does not show a frequency range selector for configuring the phase detector to produce an output signal within one of a plurality of predetermined frequency ranges, as is now specifically required by claim 1.

See also Col. 1

With respect to amended claim 2 and 16, Casper does not show a frequency range selector which compares the frequency information determined by the frequency detector to a plurality of predetermined and fixed values for selecting the frequency range.

but 0

Instead, Casper compares the values of Casper's bit rate estimator 45 to Casper's VCO rate estimator 90. (Casper Col. 7, lines 22-27) As best understood, the Office Action assumes that Casper's bit rate estimator 45 is comparable to Applicant's frequency detector, because Casper has no other frequency detector. However, Casper's bit rate estimator 45 values are compared to VCO rate estimator values which vary, and are not fixed values, and are not predetermined, as is now required by claims 2 and 16. Applicant's amended claims 2 and 16 now therefore require comparing the measured frequency information to a plurality of predetermined and fixed values, rather than unknown and variable values, as taught by Casper.

no other

Dependent claims 4, 5, 6, and 8 are now also amended to show features not taught by Casper. The Examiner has already determined that dependent claims 3 and 7 contain patentable subject matter.

Dependent claims 17, 18, 19, 20, and 22 are also amended to contain matter not shown by Casper. For example, with respect to amended claim 19, Casper does not disclose selecting the frequency range for phase acquisition (locking) based on a

currently selected frequency range which may or may not be the finally selected frequency range. In Casper, phase acquisition does not even begin until the final selected frequency range is determined, as discussed above. (Casper Col 7, lines 37-40) Moreover, in Casper, if the phase lock is lost, then the entire frequency – phase acquisition process is reinitiated and the last determined frequency range is not considered (Col. 7, line 61-62).

A rejection under 35 U.S.C. §102 must contain every element recited in the claim in as complete detail as is contained in the claim and arranged as recited in the claim. M.P.E.P. § 2131. Because Casper does not show a plurality of predetermined frequency ranges as is now specifically required by claim 1, or a frequency range selector which compares measured frequency information with a plurality of predetermined and fixed values as per claims 2 and 16, or other features in the newly amended dependent claims, it is therefore respectfully submitted that the rejection under 35 U.S.C. §102 based on Casper is clearly traversed as to remaining claims 1, 2, 4-6, 8, and 16-22.

Conclusion

It is submitted in view of these remarks that all grounds for rejection have been removed by the foregoing amendments and discussion. Reconsideration and allowance of this application are therefore earnestly solicited.

The Examiner is invited to phone the undersigned attorney, at 281-483-1001, if in his opinion such a phone call would serve to expedite the prosecution of subject patent application.

Respectfully submitted,

Date: January 27, 2001 By James M. Cate

James M. Cate, Reg. No. 25,181
Attorney for Applicant

NASA Johnson Space Center/HA
NASA Road One
Houston, TX 77058
Telephone: 281-483-1001 or -4871
Datafax: 281-244-8452